

at various heights, and liberated in those parts when the vapour is condensed into liquid. This liberation of heat creates ascending currents in the parts locally affected, when horizontal winds, produced by gravitation, blow over the surface towards the ascending currents to re-establish the disturbed equilibrium. This process, by heating the air in the middle regions, was asserted to have been proved to be the cause, not only of the great trade-winds and the monsoons, but of the storms and local winds over the different regions of the globe.

II. "Notes of Researches on the Poly-Ammonias." By A. W. HOFMANN, LL.D., F.R.S.—No. II. Action of Chloroform upon Aniline. Received April 15, 1858.

In a former Note addressed to the Royal Society (Proceedings, vol. ix. p. 150), I have alluded to some new alkaloids which are produced by the action of the bromides of triatomic alcohols upon the primary amidogen bases.

I have since examined more minutely one of these bodies. At the common temperature, chloroform and aniline may be left in contact for a considerable time without any change becoming perceptible. Even at the temperature of boiling water scarcely any reaction takes place. But on exposing for ten or twelve hours a mixture of about equal volumes of chloroform and aniline in sealed tubes to a temperature of 180° or 190° C., a hard brown crystalline mass is obtained, which consists chiefly of the hydrochlorates of aniline and of a new crystalline base.

To obtain this compound in a state of purity, the brown crystalline mixture formed in the digester-tubes is triturated with a small quantity of water, thrown upon a filter and washed with water. The first washings chiefly consist of hydrochlorate of aniline, which base separates in oily globules on addition of potassa to the filtrate. By testing the filtrate in this manner from time to time, it is found that the basic body separated by addition of potassa gradually exhibits a tendency to solidify, and ultimately falls as a yellowish-white crystalline precipitate. The residue upon the filter is now dissolved in warm (not boiling) water, separated by a filter from a brown resinous insoluble substance, and precipitated by ammonia or potassa. The crystalline precipitate obtained in this manner is washed till free from

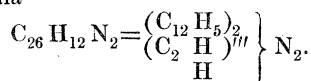
alkali, and repeatedly crystallized from weak spirit. It is difficult to obtain it perfectly white, a yellowish substance, which appears to be partly formed during the process of solution, adhering with great pertinacity.

Thus obtained, the new base is a white crystalline powder; frequently it is obtained in minute scales, generally of a yellowish tint. It is insoluble in water, but readily dissolves in alcohol and ether. From the hot solution in these solvents it is precipitated by water as a yellow oil, solidifying on cooling with crystalline structure. It is easily dissolved by acids, with many of which it forms crystalline compounds. From the saline solutions thus produced the base is reprecipitated by potassa and also by ammonia. The salts of the new base are not very stable; their solutions, especially when heated for some time, inevitably contain more or less aniline, the crystalline base itself undergoing changes which I have not yet sufficiently examined.

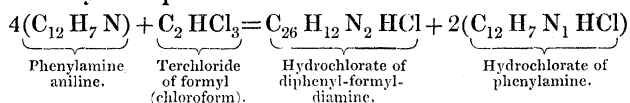
The analysis of the new compound presents some difficulty. Even after protracted exposure over sulphuric acid in the exsiccator, it retains a small quantity of water, while a temperature of 100° is apt to decompose it.

The nature of the body was, however, readily established by the examination of a perfectly stable hydrochlorate, and also of a very definite platinum-salt.

The results obtained in the analysis of these salts establish for the new base the formula

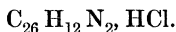


It is obviously formed by the substitution of the triatomic molecule $(\text{C}_2\text{H})'''$ for 3 equivalents of hydrogen in 2 molecules of aniline, which thus coalesce into a diamine molecule. Accordingly the base might be called diphenyl-formyl-diamine, that is, diammonia, in which 2 equivalents of hydrogen are replaced by 2 molecules of phenyl, and 3 equivalents of hydrogen by 1 molecule of formyl, 1 equivalent of hydrogen remaining unreplaced. Its formation is expressed by the equation

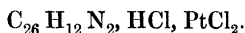


As seen from this equation, the new base, although unmistakeably corresponding to 2 molecules of ammonia, like many other poly-ammonias, is monoacid.

The analysis of the hydrochlorate leads in fact to the formula



The platinum-salt contains



The new derivative of aniline undergoes several remarkable changes which require further elucidation.

III. "Note sur un Organe, placé dans le Cordon Spermatique, et dont l'existence n'a pas été signalée par les Anatomistes."

Par F. GIRALDÈS, Professeur Agrégé de la Faculté de Médecine, &c. Communicated by Sir BENJAMIN BRODIE, Bart. Received April 19, 1858.

(Abstract.)

In this paper the author gives an account of certain tubular and vesicular bodies which he has discovered in the spermatic cord, and which he considers to be the remains of the Wolffian body of the embryo.

The structures in question, which he proposes to designate collectively by the term "Corps Innominé," form a small group situated behind the tunica vaginalis, between that membrane and the spermatic vessels, and extending usually from the head of the epididymis as high as the point where the membrane is reflected forwards from the cord; sometimes, however, reaching much higher up, or, on the other hand, being more concentrated in the neighbourhood of the epididymis.

The "Corps Innominé" is found in the new-born infant, and in a more or less modified condition at all later periods of life; it has also been met with in the lower animals. To facilitate its detection and examination, the author has found it advantageous previously to render the surrounding tissues transparent, by macerating the spermatic cord in an acid solution, for which purpose he recommends the use of tartaric or citric acid in the infant, and of dilute nitric acid in the adult.